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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/637,064	08/11/2000	Ryuichi Kido	0819-407	8725

22204 7590 07/14/2004

NIXON PEABODY, LLP
401 9TH STREET, NW
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WASHINGTON, DC 20004-2128

EXAMINER

JONES, HUGH M

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 07/14/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/637,064

Applicant(s)

KIDO ET AL.

Examiner

Hugh Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-8 of U. S. Patent 09/637,064, filed 8/11/2000, are pending.

Drawings

2. Figures 4, 6, 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. in view of Moon et al..**

5. Yamamoto et al. disclose relationships between belt tension and belt gripping force and evaluating the power transmission ability in terms of slippage (col. 3, line 33 to col. 4, line 16; col. 17, line 3 to col. 18, line 62) for belt-pulley systems.

6. Yamamoto et al. do not disclose many details relating to evaluating transmission ability.

7. Moon et al. disclose that mechanical imperfections, including misalignment of the sheaves, can significantly influence the levels of vibration and noise that are produced in power transmission belt drives. In this paper, laboratory measurements identify a particular source of vibration excitation for v-belts that is attributed to lateral misalignment of the sheaves. The belt is shown to undergo a fine, periodic, radial motion on the sheave at a frequency and amplitude that depend on the level of misalignment, the belt's bending stiffness, pre-tension, and wedge angle, the sheave's radius, and the belt-to-sheave friction coefficient, among other modelled variables. Periodic radial oscillation and slippage of the belt in this manner result from frictional stick-slip response at the belt/sheave interface. The belt experiences a prescribed sawtooth-like motion on its boundary, which is one source of its high-frequency vibration and noise. An optical displacement sensor is used to record motion of the belt on the sheave, and those measurements are correlated with the near-field sound pressure. ***A theoretical model is developed to describe boundary excitation of the belt as is caused by misalignment, and in particular to predict the frequency and amplitude of the boundary motion. The model's predictions are compared with measurements for parameter studies in the belt's***

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pre-tension and in the sheave's radius.

8. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yamamoto et al. teaching to take into account the Moon teaching of determining power efficiency because Moon et al. disclose (page 528, pars. 1-2) that load capacity and power transmission are dependent upon slippage and affect the ability of the pulley system to do work.

9. **Claims 2-5, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. in view of Moon et al. and in further view of Tajima et al..**

10. Yamamoto et al. disclose relationships between belt tension and belt gripping force and evaluating the power transmission ability in terms of slippage (col. 3, line 33 to col. 4, line 16; col. 17, line 3 to col. 18, line 62) for belt-pulley systems.

11. Yamamoto et al. is silent as to the type of belt.

12. Tajima et al. disclose the interchangeable use of flat belts, v-belts and v-ribbed belts depending on the intended use.

13. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Yamamoto et al. teaching to take into account the different types of belts because (col. 1, lines 7-18) flat belts are flexible, v-belts have high transmissibility and v-ribbed belts have both properties.

Conclusion

14. **Any inquiry concerning this communication or earlier communications from the examiner should be:**

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directed to:

Dr. Hugh Jones telephone number (703) 305-0023, Monday-Thursday 0830 to 0700 ET, *or* the examiner's supervisor, Kevin Teska, telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

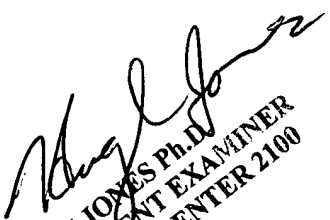
or faxed to:

(703) 308-9051 (for formal communications intended for entry)
or (703) 308-1396 (for informal or draft communications, please label "*PROPOSED*"
or "*DRAFT*").

Dr. Hugh Jones

Primary Patent Examiner

July 6, 2004


HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100